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AMENDMENTS TO THE CLAIMS

1-88 (Cancelled)

89. (Currently Amended) A multi-reaction site assay plate structure comprising:

an upper substantially planar, rigid surface;

~~and~~ a lower closely spaced opposed and substantially planar, rigid surface;

a plurality of dividers extending between said upper and lower surfaces so as to define a space therebetween, and to define a plurality of sectors that are configured to receive a sector plate insert; a cavity between the upper surface and the lower surface holding a insert disc having a plurality of separate reaction sites;

at least one coverless sector plate insert configured to be removeably inserted in a sector so as to define a liquid receiving chamber between the upper surface of the sector plate insert and the upper rigid surface, wherein said upper surface of the sector plate insert comprises a plurality of separate reaction sites;

at least one first opening in one of said upper and lower surfaces providing access to said ~~space~~ chamber for introduction of fluid thereto from an external location, the sites being such that when excess fluid is subsequently withdrawn through said at least one first opening some of said fluid is left at said sites; and

encoded information stored in at least one of said upper and lower surfaces so as to be readable by a scanned light beam, said encoded information including address information providing location information as to the part of said assay plate structure being scanned by the light beam.

90. (Currently Amended) The assay plate structure of claim 89 wherein ~~the spacing is less than 1mm.~~ the spacing between said upper and lower surfaces is sufficiently small to facilitate the flow of said fluid in said space chamber by capillary action to substantially fill the space and cover all of the sites.

91. (Currently Amended) The assay plate structure of claim 89-90 wherein the spacing is less than 1 0.5mm.

92. (Previously Presented) The assay plate structure of claim 89 wherein said at least one first opening is configured to receive the end of a liquid injecting device, and said at least one first opening forms a substantially air-tight seal around said end.

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93. (Previously Presented) The assay plate structure of claim 89 wherein the multi-reaction site structure is a disc which includes upper and lower circular plates, the internal surfaces of which respectively define said upper and lower opposed surfaces.

94. (Previously Presented) The assay plate structure of claim 93 further comprising at least one second opening located at the peripheral edge of the disc.

95. (Currently Amended) The assay plate structure of claim 94 wherein ~~the space between the upper and lower surfaces is subdivided, by one or more dividing walls, to provide a plurality of spaces, each space being~~ sector is provided with at least one of said first openings and at least one of said second openings to enable each ~~space~~ sector to be independently filled.

96. (Previously Presented) The assay plate structure of claim 93 wherein at least one of the upper and lower plates forming the structure are transparent to enable optical inspection of the sites from outside the structure.

97. (Previously Presented) The assay plate structure of claim 96 wherein the other of the upper and lower plates includes a reflecting surface for providing improved signal detection.

98. (Previously Presented) The assay plate structure of claim 89 wherein the plate structure is provided in the form of a disc and said encoded information is digitally encoded.

99. (Previously Presented) The assay plate structure of claim 98 wherein at least a portion of the plate structure is transparent for optical inspection of said reaction sites.

100-104. (Cancelled)

105. (Currently Amended) An optically transparent structure for conducting assays said structure comprising:

one or more chambers, each having an upper substantially planar, rigid surface and a lower closely spaced opposed and substantially planar, rigid surface, said upper and lower surfaces separated by a plurality of dividers extending therebetween so as to define a space therebetween and to define a plurality of sectors that are configured to receive a sector plate insert, and at least one of said upper and lower surfaces having at least one first opening for introduction of fluid therethrough into said one or more chambers;

at least one coverless sector plate insert disc positioned within one of the ~~chambers~~ sectors; and

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encoded information stored in at least one of said upper and lower surfaces so as to be readable by a scanned light beam, said encoded information including address information providing location information as to the part of said structure being scanned by the light beam for at least one of said a plurality of surface locations.

106. (Cancelled)

107. (Currently Amended) The structure of claim 105 wherein areas of said lower surface between said surface locations include hydrophobic coatings.

108. (Previously Presented) The structure of claim 105 wherein said surfaces are provided by respective upper and lower plates of a disc.

109. (Cancelled)

110. (Previously Presented) The structure of claim 108 wherein said encoded address information is provided for optical inspection of said at least one of said plurality of surface locations from exteriorly of said structure.

111. (Previously Presented) The structure of claim 105 wherein said at least one first opening is configured to receive the end of a liquid injecting device, and said at least one first opening forms a substantially air-tight seal around said end.

112. (Previously Presented) The structure of claim 105 wherein the structure is a disc which includes upper and lower circular plates, the internal surfaces of which respectively define said upper and lower opposed surfaces.

113. (Previously Presented) The structure of claim 112 further comprising at least one second opening located at a peripheral edge of the disc to vent said space.

114. (Currently Amended) The structure of claim 113 wherein ~~the space between the upper and lower plates is subdivided, by one or more dividing walls, to provide a plurality of spaces, and each space being~~ sector is provided with at least one of said first openings and at least one of said second openings to enable independent access to each space sector.

115. (Currently Amended) The structure of claim 114 wherein the ~~dividing walls~~ dividers are radially extending.

116. (Previously Presented) The structure of claim 112 wherein at least one of the upper and lower plates forming the structure is transparent to enable optical inspection of the

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surface locations from outside the structure, and the other of the upper and lower plates includes a reflecting surface.

117. (Cancelled)

118. (Previously Presented) The structure of claim 105 wherein the structure is provided as a sector of a disc.

119. (Currently Amended) The structure of claim ~~117~~ 118 wherein the structure is made of plastic and said one or more inserts is snap-fitted onto the disc.

120. (Previously Presented) The structure of claim 119 wherein the structure and the disc include lock and key portions to allow the structure to be snap-fitted to the disc in a correct orientation only.

121. (Previously Presented) The structure of claim 105 including one or more lenses to improve the optical inspection of said surface locations.

122. (Previously Presented) The structure of claim 121 wherein said one or more lenses are molded into said structure.

123. (Currently Amended) A multi-reaction site assay plate structure comprising:

an upper substantially planar, rigid surface and a lower closely spaced opposed and substantially planar, rigid surface, said upper and lower surfaces separated by a plurality of dividers extending therebetween so as to define a space therebetween and to define a plurality of sectors that are configured to receive a sector plate insert, and at least one of said upper and lower surfaces having at least one first opening for the introduction of a fluid therethrough into said space;

at least one covered sector plate insert disc positioned within one of the sectors, the insert having a plurality of separate reaction sites; and

encoded information stored in at least one of said upper and lower surfaces so as to be readable by a scanned light beam, said encoded information including address information providing location information as to the part of the assay plate structure being scanned by the light beam.

124. (Cancelled)

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125. (Previously Presented) The assay plate structure of claim 123 wherein said at least one first opening is configured to receive the end of a liquid injecting device, and said at least one first opening forms a substantially air-tight seal around said end.

126. (Previously Presented) The assay plate structure of claim 123 wherein the structure is an optically transparent disc which includes upper and lower circular plates, the internal surfaces of which respectively define said upper and lower opposed surfaces.

127. (Previously Presented) The assay plate structure of claim 126 further comprising at least one second opening located at a peripheral edge of the disc.

128. (Currently Amended) The assay plate structure of claim 127 wherein ~~the space between the upper and lower plates is subdivided, by one or more dividing walls, to provide a plurality of spaces, each space being~~ sector is provided with at least one of said first openings and at least one of said second openings to enable each space sector to be independently accessed.

129. (Previously Presented) The assay plate structure of claim 126 wherein at least one of the upper and lower plates forming the structure are transparent to enable optical inspection of the sites from outside the structure.

130. (Previously Presented) The assay plate structure of claim 129 wherein the other of the upper and lower plates includes a reflecting surface.

131. (Previously Presented) The assay plate structure of claim 126 wherein said encoded address information is digitally encoded.

132-155. (Cancelled)

156. (Previously Presented) The assay plate structure of claim 89, wherein the reaction sites comprise wells configured to receive a portion of said fluid.

157. (Currently Amended) The structure of claim 105, wherein the surface locations bearing a hydrophilic coating and comprise wells configured to receive a portion of said fluid.

158. (Previously Presented) The assay plate structure of claim 123, wherein the reaction sites comprise wells configured to receive a portion of said fluid.

159. (New) The assay plate structure of claim 89 wherein the upper rigid surface includes at least one moveable portion corresponding with an adjacent sector, wherein the moveable portion is configured to move with respect to the remainder of the upper rigid surface

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so as to permit insertion and removal of the sector plate insert into and out of said adjacent sector.

160. (New) The assay plate structure of claim 105 wherein the upper rigid surface includes at least one moveable portion corresponding with an adjacent sector, wherein the moveable portion is configured to move with respect to the remainder of the upper rigid surface so as to permit insertion and removal of the sector plate insert into and out of said adjacent sector.

161. (New) The assay plate structure of claim 123 wherein the upper rigid surface includes at least one moveable portion corresponding with an adjacent sector, wherein the moveable portion is configured to move with respect to the remainder of the upper rigid surface so as to permit insertion and removal of the sector plate insert into and out of said adjacent sector.